

REMARKS

Claims 1-4 and 7-9 currently appear in this application. The Office Action of July 28, 2003, has been carefully studied. These claims define novel and unobvious subject matter under Sections 102 and 103 of 35 U.S.C., and therefore should be allowed. Applicants respectfully request favorable reconsideration, entry of the present amendment, and formal allowance of the claims.

Rejections under 35 U.S.C. 112

Claims 1-4 and 6-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Examiner alleges that the preamble in claim 1 appears to be inconsistent with the body of the claim.

This rejection is respectfully traversed. Claim 1 is directed to forming a web, and the "comprising" open-ended language does not limit the web to only one layer. A layered web can be manufactured using a single distribution head or by the use of several distribution heads. From the drawing, it is clear that two distribution heads are used. Even if only one single distribution head is used, it is possible to add superabsorbents, e.g., in the foremost part of the

distribution head, thereby producing a product in which the superabsorbents are concentrated in one layer of the web. This does not necessarily mean that a web should be manufactured from three separately formed layers.

Claim 1 has now been amended to recite that the process is for forming a web with a plurality of layers, which is clear from the specification as originally filed at page 3, paragraph 3, line 3 and page 8, lines 3 and 4, wherein it is stated that a "surface layer exists." Since there is a surface layer, there is necessarily at least one additional layer. In the actual production of a web according to the present invention, the central layer is disposed in a web of cellulose fibers during the layer process step, as indicated by the Examiner. Accordingly, it is the correct understanding that claim 1 defines a web of cellulose fibers having a superabsorbent central layer.

Based upon the above explanation, it is respectfully submitted that claim 1 as amended has overcome the objections raised. Simultaneously, it has been clarified that the formation of the center layer is effected as a part of the method step of laying a web of cellulose fibers.

Art Rejections

Claims 1-4 and 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bair in view of Kannankeril et al., Frankosky et al. and Kennette et al.

This rejection is respectfully traversed. It is respectfully submitted that Bair is not an appropriate reference, as Bair does not disclose a process for manufacturing a dry-formed paper web. As discussed in the amendment filed July 11, 2003, Bair discloses a process for producing a carded web. One skilled in the art knows that a carded web would have no problem with dust, since the fiber lengths for non-woven webs made as carded webs would be made from fibers which are at least one inch long. Fibers so short as to be considered dust would not be used to make a carded web. Moreover, Bair does not teach the use of cellulosic fibers. There is no dusting during manufacture of the Bair web.

Bair merely discloses an enclosure comprising two outer layers containing a core or a central part in the form of a water-absorbent pad which can contain superabsorbents. Clearly, the Bair product is not manufactured with a step in which a web of cellulose fibers are produced, and it is also

clear that such web of cellulose fibers does not contain a center layer containing superabsorbent material.

Moreover, it is clear that in Bair the central part or the pad 10 is manufactured from carded web. A carded web which does not contain cellulose fibers will have no problem with dust during manufacture, and one skilled in the art would not look to Bair in order to solve the problems relating to dust. Although Bair discloses that the binder fibers are softened, heating for effecting this softening is for the pad only, and not for the two outer fabric layer 12, 14. Accordingly, there is no indication that a binder material could be cured simultaneously when heating the thermobonding fibers in order to increase the tensile strength in a method according to Bair. Accordingly, the Bair process has no bearing on the process of the present invention, and the remaining cited patents do not cure this defect.

Contrary to the Examiner's assertions that it is obvious to replace a non-woven fabric with dry-formed paper, this is not correct. Even though it is well known in the art to use papers as a weakening layer, there is no reason for one skilled in the art in manufacture of absorbent dryformed paper web to begin with the Bair technology. Using the Bair

technology would only be an *ex post facto* conclusion when one is aware of the method of the present invention.

It should also be realized that, even though it is well known to use paper as a wicking layer, then one skilled in the art who makes a product according to Bair would be of the opinion that a dry-formed paper web of cellulose fiber would have insufficient strength to contain the large SAP-containing core. Accordingly, there is no reason why one skilled in the art would amend the product taught by Bair by making an enclosure of two fabric layers manufactured of cellulosic fibers.

The Examiner states that it is unclear how the resin is applied to the outer non-woven fabrics. It is not understood why this is unclear, as the specification contains the explanation that the resin could be sprayed or could be applied as an aqueous foam so that it is easier to control the penetration depth of the resin or binder material. This can be found in the specification as originally filed at page 8, lines 20-35.

Frankosky teaches a resin coating, and it has already been acknowledged that the use of a resin coating is well known in the art. However, the unobviousness of the present invention to a large extent consists in the

combination of applying a binder and use of thermoplastic fibers. While Frankosky implicitly suggests coating about 5g/m² or more, it is not understood why it should be obvious to apply this amount of binder to the Bair product, merely on an implicit suggestion by Frankosky. Even if one skilled in the art would use this amount of dry matter for the surface, there are still no indications that such limited amount of dry matter should be used in conjunction with the use of thermobonding fibers in the web.

Claims 1-4 and 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Admitted prior art (APA) in view of Bair, either LeVan or Frankosky et al., Kennette et al and further in view of Bryson.

This rejection is respectfully traversed. As noted previously, the admitted prior art at paragraph 0009 states that normally, products bonded by spraying followed by compacting or embossing are relatively compact, lint free, and have a relatively high durability and reasonably good absorption. However, the specification states that airlaid products bonded with thermal bonding fibers have different properties from products made solely with binding agents sprayed onto the web. However, as the specification at paragraph 0014 notes, airlaid products made from cellulose

fibers with activated binding fibers have a tendency to release fibers which exposed to stretching and vibration during further handling. Previous solutions to avoid using by using a higher percentage of binder fibers of different lengths is not realistic from a production standpoint. The claims now require that the dryformed paper web have a central layer in which super absorbent material is incorporated. This feature is not shown in the admitted prior art nor in any of the patents cited by the Examiner.

There is no reason to combine the admitted prior art, which was described as being inadequate to produce absorbent dryformed paper webs, with Bair. Bair discloses a water absorbent pad which actually consists of three different webs or layers. The pad 10 according to Bair comprises two outer layers, 13 and 14, which are hydrophilic layers. A third web, 16, consisting of a super absorbent polymer-containing web, is sandwiched between the two outer layers. This is not at all like an absorbent dryformed paper web which has a super absorbent central layer.

A small amount of dry matter in the surface of the web would normally involve the use of a solution containing a large amount of water. This would involve soaking the product, which is believed to be impossible if the product

also contains superabsorbents in a central layer, since the superabsorbents would be destroyed when applying the binder to the surface, as the water would partially penetrate into the central layer. The present inventor has realized that it is possible, even using superabsorbents in the central layer, to make and use a binder for the surface layer to obviate dusting. This has never been realized before, and none of the cited art discloses or suggests using this technique for webs having a central layer.

In view of the above, it is respectfully submitted that the claims are now in condition for allowance, and favorable action thereon is earnestly solicited.

Respectfully submitted,

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